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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/085,081      | 03/01/2002  | Takayuki Yamamoto    | 220119US0           | 9114             |

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EXAMINER

UHLIR, NIKOLAS J

|          |              |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

1773

DATE MAILED: 04/30/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/085,081

Applicant(s)

YAMAMOTO ET AL.

Examiner

Nikolas J. Uhlir

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-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) none is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) none is/are objected to.
- 8) ☐ Claim(s) none are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-5, and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinohara et al. (EP0722933A1).
4. The limitations of claim 1 require a metal sheet with an anticorrosive coating formed from an anticorrosive paint on at least one side thereof, where the anticorrosive paint contains a metallic zinc powder and at least one kind of metal salt rust inhibitor, said metal salt being a salt of a metal which is more base than zinc.
5. It should be noted that for the purpose of this examination, the examiner interprets "contains" as open language that allows for other components other than those specifically cited to be included in the anticorrosive paint.
6. With respect to these limitations Shinohara et al. (Shinohara) teaches a process for coating a steel plate with a corrosion inhibiting coating, wherein the corrosion inhibiting coating comprises a polymer binder, a zinc powder having an average particle size in the range of 1-15 $\mu$ , and a rust preventing pigment selected from zinc phosphate,

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aluminum phosphate, calcium phosphate, zinc molybdate or calcium molybdate (page 3, lines 50-59 and page 10, lines 38-40). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to select either aluminum or calcium phosphate as the rust preventing pigment in Shinohara, as these materials are recognized to be equivalent to the other materials listed as suitable for this purpose.

7. The applicant is respectfully reminded that substitution of equivalents requires no express motivation as long as the prior art recognizes the equivalency. *In Re Fount* 213 USPQ 532 (CCPA 1982); *In Re Siebentritt* 152 USPQ 618 (CCPA 1967); *Grover Tank & Mfg. Co. Inc V. Linde Air Products Co.* 85 USPQ 328 (USSC 1950).

8. The examiner takes the position that the requirement in claim 1 that the rust inhibitor be a salt of a metal that is more basic than Zinc is met when either aluminum or calcium phosphate is utilized, as these materials are specifically listed on page 4, paragraph 3 of the instant specification as meeting this requirement.

9. Regarding the limitations of claim 2, wherein the applicant requires the substrate to be a steel sheet, this limitation is met as set forth above for claim 1.

10. Regarding the limitations of claim 3, wherein the applicant requires the coating film to have a thickness in the range of 5-30 $\mu$ . Shinohara teaches that the dry film thickness of the coating should preferably be between 10-30 $\mu$  (page 5, lines 44-47). Thus, this limitation is met.

11. Regarding claim 4, wherein the applicant requires the zinc powder to have an average particle diameter between 0.01-20 $\mu$ . As stated above for claim 1, Shinohara

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teaches that the powder has an average particle size between 1-15 $\mu$ . Thus this limitation is met.

12. Regarding claim 5, wherein the applicant requires the coating to contain 40-95% by weight zinc powder based on the total weight of the solids in the coating. Shinohara teaches that the coating preferably contains 20-50% by weight of the Zinc Powder (page 4, lines 3-6). Thus, as 50% by weight is completely encompassed within the applicants claimed range, this limitation is met.

13. Regarding claim 7, wherein the applicant requires the coating to contain 1-30% by weight of the rust inhibitor based on the weight of the solids in the coating. Shinohara teaches that the coating composition contains 20-50% by weight of the rust inhibiting pigment (page 4, lines 3-6). Thus, as 20% by weight is completely encompassed within the applicants claimed range, this limitation is met.

14. Regarding claim 8, wherein the applicant requires the metal salt rust inhibitor to be a phosphate. This limitation is met as set forth above for claim 1 when calcium or aluminum phosphate is utilized as the rust preventing pigment.

15. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinohara as applied to claim 1 above, and further in view of Wasel-Nielen et al (US4294808).

16. Shinohara does not teach the use of a metal salt rust inhibitor having an average particle diameter no larger than 1 $\mu$ m.

17. However, Wasel-Nielen et al. (Wasel) teaches a method for making aintocorrosive pigments such as calcium and aluminum phosphate such that greater

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then 90% of the pigment has a particle size in the range of 0.05-8 $\mu$  (column 4, lines 26-41 and column 6, example 6). Pigments having such a particle size directly are particularly suited for use as anticorrosive pigments (column 3, lines 45-50).

18. Therefore it would have been obvious to use the 0.05-8 $\mu$  Ca or Al phosphate particles taught by Wasel as the anticorrosive pigment utilized by Shinohara.

19. One would have been motivated to make such a modification due to the teaching in Wasel that Al or Ca pigments having this particle size are particularly suited for use as anticorrosive pigments.

20. Further, Wasel teaches that the particle size of an anticorrosive pigment impacts the anticorrosive efficiency of the pigment. Specifically, Wasel teaches that a the particle size of an anticorrosive pigment is preferably small, so that the pigment can exhibit maximum surface area and coverage with a minimum amount of pigment utilized (column 1, lines 18-50 and column 4, lines 26-41).

21. Therefore it would have been obvious to one of ordinary skill in the art to optimize the particle size of the Ca and Al phosphate pigment taught by Wasel within the desired range so as to obtain an anticorrosive pigment exhibiting a maximum surface area with a minimum amount of material utilized.

22. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinohara as applied to claim 1 above, and further in view of Mekishima et al. (US4040842).

23. Shinohara does not teach the use of a metal salt rust inhibitor that is a phosphomolybdate of a metal that is more basic than Zn, as required by claim 9.

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24. However, Mekishima et al. (Mekishima) teaches various corrosion inhibiting pigments that are suitable for use in a corrosion prevention coating that also includes zinc powder and a resin binder. Suitable corrosion inhibiting pigments include zinc molybdate, calcium molybdate, magnesium phosphomolybdate, and barium phosphomolybdate.

25. Therefore it would have been obvious to one of ordinary skill in the art to utilize barium or magnesium phosphomolybdate as taught by Mekishima as the corrosion inhibiting pigment taught by Shinohara.

26. One would have made this modification in light of the fact that Ba and Mg phosphomolybdate are recognized to be equivalent to Zn molybdate as suitable materials for use as a corrosion inhibiting pigment in a corrosion resistant resin powder that additionally comprises a zinc powder.

27. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shinohara as applied to claim 1 above, and further in view of Rivera (US6117251).

28. Shinohara does not teach a phosphate coating between the metal sheet and a corrosion inhibiting paint coating, as required by claim 10.

29. However, Rivera teaches coating a steel sheet with a layer of Zinc Phosphate so as to minimize the corrosion of the sheet and to improve the adhesion of subsequently coated materials such as sealants and paints to the surface of the metal sheet (column 2, lines 34-42 and column 1, lines 5-20).

30. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a zinc phosphate coating as taught by Rivera between

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the surface of the steel sheet and the corrosion preventing coating utilized by Shinohara.

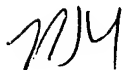
31. One would have been motivated to make this modification due to the teaching in Rivera that applying a layer of Zinc Phosphate to the surface of a steel sheet improves the adhesion of subsequent materials that are deposited on the sheet.

### ***Conclusion***

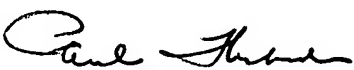
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nikolas J. Uhler whose telephone number is 703-305-0179. The examiner can normally be reached on Mon-Fri 7:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on 703-308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-0389.



nju  
April 24, 2003



Paul Thibodeau  
Supervisory Patent Examiner  
Technology Center 1700